A STUDY OF MILLET CONSUMPTION AND AWARENESS ABOUT ITS HEALTH BENEFIT

[with special reference to Ranchi]

A

SYNOPSIS / RESEARCH PROPOSAL

FOR

THE DEGREE

OF

DOCTOR OF PHILOSOPHY

IN

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STATE OF THE ART

Millets are a highly varied group of small seeded grasses, widely grown around the world as cereals or grains for fodder and human food. Millets are important food crops in semi- arid tropics of Asia and Africa. Millet is a low maintenance and drought resistance grain. This grain provides various health benefits, such as protecting heart health, helping to maintain a healthy weight. Millets have been an integral part of our diet for centuries. Millets have incredible nutritional value. For persons with diabetes, it offers several health advantages. Millets grow extremely quickly and matures in almost half the time required for rice and rice. This makes this the ideal crop. Millets are gluten free and a good source of protein, fibre, micronutrients, [ca, fe, mg, k, zn, b vit, niacin, b6]. Millet contains an average of 10-12% protein and is superior to that of wheat or corn in terms of content of essential amino acid. Millets are rich in the phytochemicals like polyphenols and antioxidants which are helpful in delaying diabetes.

Millets are a great source of complex carbohydrates. They have a lower glycemic index. They absorb slowly and prevent sugar spikes. In India millets are generally consumed with legumes, which creates mutual supplementation of protein, increases the amino acid content and enhances the overall digestibility of protein.

TYPES OF MILLETS

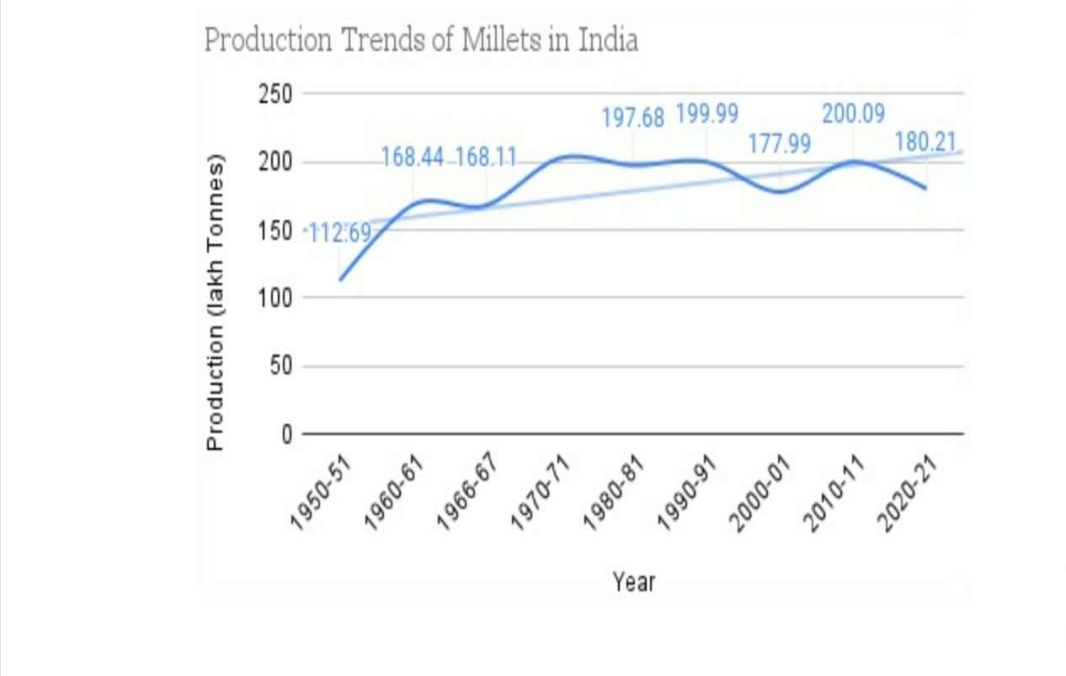
- Sorghum millet [jowar]
- Proso millet [chena\barri]
- Pearl millet [bajra]
- Foxtail millet [kakum\kangani]
- Finger millet [ragi]
- Browntop millet [Korle]
- Barnyard millet [Sanwa]
- Little millet[moraiyo]
- Buckwheat millet [kuttu]
- Amaranth millet [rajgira]
- Kodo millet

Nutritional content in 100 gms of dry Grain	Protein (in gms)	Carbohydrates (in gms)	Fat (in gms)	Minerals (in gms)	Fiber (in gms)	Calcium (in mgs)	Phosphorous (in mgs)	Iron (in mgs)	Energy (in kCals)	Thaimin (in mgs)	Niacin (in mgs)
Foxtail	12.3	60.2	4.3	4	6.7	31	290	2.8	351	0.59	3.2
Little	7.7	67	4.7	1.7	7.6	17	220	9.3	329	0.3	3.2
Kodo	8.3	65.9	1.4	2.6	5.2	35	188	1.7	353	0.15	2
Proso	12.5	70.4	1.1	1.9	5.2	8	206	2.9	354	0.41	4.5
Barnyard	6.2	65.5	4.8	3.7	13.6	22	280	18.6	300	0.33	4.2
Sorghum	10.4	70.7	3.1	1.2	2	25	222	5.4	329	0.38	4.3
Pearl	11.8	67	4.8	2.2	2.3	42	240	11	363	0.38	2.8
Finger	7.3	72	1.3	2.7	3.6	344	283	3.9	336	0.42	1.1
Paddy Rice	6.8	78.2	0.5	0.6	1	33	160	1.8	362	0.41	4.3
Wheat	11.8	71.2	1.5	1.5	2	30	306	3.5	348	0.41	5.1
Quinoa	14	64	6	*	7	36	457	4.6	368	0.36	*

Compiled from a study published by the National Institute for Nutrition, Hyderabad and other sources for Quinoa.

In India millet production has been on the rise in recent years. India is one of the largest producers of millets and Indian farmers have been increasingly planting millet as a drought-resistant crop. The Indian government has also been promoting millet production as part of its national food security mission. As a result of these factors millet production in India is expected to continue to grow in the coming years.

The graph below depicts the production trends of millets in India :-



Source : Agricultural and Processed Food products Export Development Authority (APEDA)

REASONS OF DECLINE

- Rapid urbanization
- Changing consumer tastes and preferences
- Government policies favouring other crops such as output price incentives and output subsidies
- Supply of PDS rice and wheat at cheaper price
- Poor social status and inconvenience in their preparation
- Lower shelf-life of milled grain and flour of millets

MILLETS ARE RISING AGAIN

Reason for millets recent resurgence is that it is gluten free and therefore ideal for those people who have allergies from gluten.

Now the awareness about goodness of millets is spreading to the educated strata, mainly made of middle and upper classes, and thus millets are back in grocery shops, and available in online shops

Recently the government of India has taken the plunge to include millets in PDS. India's top millet producing states are Rajasthan, Uttar Pradesh, Maharashtra, Karnataka, Gujarat, and Madhya Pradesh. Rajasthan is India's largest producer of millet, accounting for 27-36% of the country's total output.

1]DR.VPT Denika, J Saradha [2018]

This study was a case study on health awareness about organic cereals and millets among women college teachers in Tiruchirappalli town . methodology -pilot study is conducted with 50 respondents and findings are 58% of respondents are aware about organic cereals and millets.86% of respondents are aware about wheat and finger millets, 32% are aware about organic cereals and millets for a period of above 3 years and 22%are aware about organic cereals and millets through television.

2] Sooriya Arachchige, Sachin Jayawardana, Dineth Suharda Samarawickrama, JKRR Samarasekera [2020]

This study was conducted to evaluate Sri Lankan's awareness and attitudes towards finger millets and preference towards finger millet based foods.

Methodology- pre tested, self administrated questionnaires were formulated in the three languages used in Sri Lanka, namely Sinhala, Tamil and English. 1016 respondents were selected for the study. Data were analysed using frequency analysis and chi square analysis. This consumer survey is useful in identifying Sri Lankan's awareness and attitudes towards finger millets and preferences towards finger millet-based food products.

3] JK Potaka, S Anitha,TW Tsusaka [2021]

To understand public knowledge and practices of consuming millets in urban area, a survey was conducted with 15,522 individuals from seven major cities of India using a structured questionnaires and after data cleaning 15,139 observations were suggested to analysis using descriptive and inferential statistics.

4] N Prathyusha, V V Lakshmi [2021]

This study was on consumer awareness and health benefit about millets, the present research work has been conducted on nutritional composition of millets. The current review is to collect the available information from existing literature either offline or online related to the consumer awareness and health benefiting properties of millets.

5] C Hemamalini, S Sam, T Patro [2021]

Researches have reported that the presence of dietary fibre and phenolic compounds help in the prevention of many diseases such as diabetes, CVD, etc; inspite of all these aspects consumption of millets has decreased from last two to three decades.

6] SM Downs, R Kapoor, E V Merchant, T V Sullivan [2022]

This study mainly on the chotanagpur region, which comprises the khunti district. This research was about the nutrient rich traditional foods to improve diets among indigenous population in India; valuable chain analysis of finger millets and kionaar leaves

7] D Shirahatti, C Nagadeepa, SK Singh [2022]

This study aims to figure out the awareness level of the consumers which leads them to consume millet/millet based products. The study was conducted among 220 respondents. The findings of the study are most of them are aware of millets health benefits and intended to consume it in their daily food menu.

8] H Pathak, KNM Kiran, AK Gauraha, [2023]

This study aimed to investigate consumer awareness and consumption patterns of millets and millets- based products among residents of Raipur city, Chhattisgarh. A convenience sampling method was used, resulting in a sample size of 150 respondents. Data was collected through a structured questionnaire for data analysis.

9] M Rizwana, P Singh, N Ahalya [2023]

The research was carried out in the city of Bengaluru in the state of Karnataka, India. For the purpose of study a sample of 855 female respondents was approached using a non-probability sampling technique known as convenience sampling. In result the poor nutritional status of modern-day workers is attributed to a lack of education, lack of awareness and a general disregard for health related concerns.

10] KL Priya, S Shobana,V Sudha, R Gayathri [2024]

This research was quantitative research study conducted in the cities of Chennai, Namakkal and Chidambaram of Tamil Nadu during year 2021. Respondents were selected through friends, relatives, neighbours, randomized purposive sampling method was adopted for selection of 100 respondents who were millet consumer. the study shows that consumption of millet is largely influenced by the perception that millet are nutritious and healthy.

PROBLEMS TO BE INVESTIGATED

As people are unaware about the nutritional and therapeutic properties of millets. People are consuming only rice and wheat in their staple diet. The consumption of millet especially among women can have several potential benefits, including improving nutrition, supporting sustainable agriculture and promoting food security. This study will investigate on the consumption of millet and awareness about the health benefit of women.

As women are facing many problems like anaemia, back pain, feel tired etc; Anaemia is quite widespread in India, the prevalence varying from 45% in male adults to70% in women and children.it can be seen that the amount of iron needed is greater during pregnancy than any other stage of life. The girls and women who lose blood in menstruation need more iron than boys and men of the same age. RDA of iron for pregnant women is 38 mg/day and for girls 28-30mg/day. A large percentage of Indian women especially from the low-income group suffer from anaemia, osteoporosis.

OBJECTIVES

The main objectives of the study are as follows;

- To study the level of awareness among women regarding the nutritional and health benefits of millets.
- To study the role of education and income on the millets consumption of women.
- To study the correlation between socio economic factor and millets consumption pattern.

MOTIVATION

As UN declared 2023 as International Year of Millets, I got interest in women diet. As women undergo through various stages including periods , pregnancy, lactation, menopause and at the same time manage the responsibility of their workplace and household chores. And they avoid their health where they faces many health issues like anaemia, osteoporosis, tired easily, feel faint , obesity, diabetes, etc.,

RESEARCH QUESTION

- What is the extent of knowledge among women regarding the nutritional content and health benefits of millets?
- Is there a correlation between education and income on the millet consumption of women?
- Is there a significant association between socio economic factors and millets consumption among women?

RESEARCH DESIGN AND METHODOLOGY

TYPE OF RESEARCH- this research is an exploratory research.

SIZE AND TYPE OF SAMPLE- data will be collected through non probability sampling which is known as convenience sampling . the size of sample will be 300 women of Ranchi from selected area.

AREA OF RESEARCH

Namkom- 75

Chutia- 75

Tatisilwai-75

Bargawan- 75

RESPONDENT

The respondent will be women age group of 21-59 yrs

SOURCE OF DATA

The source of data will be primary, secondary data will be collected through books, journals, online sites and primary data will be collected through schedule.

TOOLS AND TECHNIQUE OF DATA COLLECTION

Schedule will be structured to gather data of respondent.

Dietary assessment- 24 hrs recall methods, food frequency questionnaire (FFQ) will be done to assess intake of millets consumption

Likert scale- to check the level of awareness

SELECTION OF VARIABLES

Sl. No.	Independent Variables	Dependent Variables
1	Education	Awareness
2	Source of information About Millets	Awareness
3	Occupation	Consumption
4	Income	Consumption

CALCULATION FOR MILLET CONSUMPTION

Food intake pattern- 24 hrs dietary recall

CALCULATION FOR AWARENESS LEVEL

Likert scale consist of awareness question

DATA ANALYSIS

At first the socio-economic status will be analyse of the respondents then the education level which shows the awareness level of millets because educated people know about the health benefits of millets but some uneducated persons also have the knowledge related to millets. Data will be analysed with the help of pie chart, bar diagram as and where required. Age, education, millets consumption, types of millet, frequency of intake will be calculated. some data will be analysed through likert scale which will be based on some question in schedule

SIGNIFICANCE OF THE STUDY

Many people are still unaware of health benefits of millets and they are suffering from many health issues. this study will aware the society in the following ways: -

- Aware about health benefits of millet,
- Change the dietary and lifestyle
- Entire family will be healthy

LIMITATION

- Study will be limited in selected area
- The age of women will be 21-59yrs
- Dietary assessment is done by 24 hrs recall

ITS RELEVANCE TO THE PRESENT-DAY PROBLEM AND NEED OF THE SOCIETY

This study is relevance to the present day. Some people are health conscious some are not. Some are unaware about the junk and fast food as they are eating in their busy life which makes them unhealthy. As millet is the power house of nutrition all have to consume millets in adequate amount in their diet.it is clear to the people that all the lifestyle disease can be made to disappear just by eating millets and removing refined food. There is an increasing trend in research, focusing on the application of alternative grains such as ragi which is potentially healthy to present the increasing calcium deficiency among individual.

CONTRIBUTION TO THE EXISTING KNOWLEDGE

To understand the dietary pattern of women, this research adds to the existing knowledge on the women of specified group. This is important because dietary habit may vary on factors like socio-economic status, occupation etc.,

Investing among women provides valuable, insights into their nutritional status. This contributes to our understanding of the adequacy of millets intake in this population.

This research will explore this factors influencing the dietary choice of women such as cultural influences, time constraints and access to healthy food option.

By assessing the consumption and awareness of millet among women this research fills a gap in knowledge regarding the nutritional health of this group.

This research will be valuable for women. This will made changes in many unaware women and to overcome their health issues.

FUTURE WORK

Conduct longitudinal studies to track changes in dietary patterns and millets consumption among women over time. This would provide insights into how dietary habits change with different life stages or socio-economic changes. Evaluate the effectiveness of this intervention in promoting behaviour change and improving nutritional outcomes investigate the long-term health outcome associated with dietary patterns millet intake among women. This could include studying bone health, risk of chronic disease and dietary patterns This study will be aimed to provide data on millet consumption and awareness on women. The results thus obtained from this study will be helpful for future work among women in Ranchi.

TENTATIVE CHAPTERS

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CHAPTER-3	RESEARCH DESIGN AND METHODOLOGY
CHAPTER-4	RESULT AND DISCUSSION
CHAPTER-5	CONCLUSION AND SUGGESTION
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